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ABSTRACT

This brief paper presents principles of universal design of learning (UDL) and applies these principles directly to good classroom practices. UDL is an approach to learning in which curriculum designers consider the full scope of student abilities including varying abilities to see, hear, speak, move, read, write, comprehend English, attend, organize, engage, and remember. Seven principles of universal design are identified: equitable use; flexibility in use; simple and intuitive; perceptible information; tolerance for error; low physical effort; and size and space for approach and use. The paper then relates these principles to three principles of classroom practice: (1) flexibility in curriculum (teaching methods, classroom environment and assessment); (2) inclusion of every student with support provided when needed; and (3) teacher preparation and organization to optimize use of flexible curricular materials and technology, assessment of individual needs, and selection of appropriate instructional strategies. (DB)

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Universally Designed Instruction

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By definition, universal design for learning (UDL) is the design of instructional materials and methods that makes learning goals achievable by individuals with wide differences in their abilities. Universal design is attained by means of flexible curricular materials and activities that provide alternatives for students. As much as possible, these "designed-in" alternatives, which include different assistive technologies and cognitive supports, do not have to be added by teachers. However, effective use of the materials requires that the teacher be familiar with the various teaching strategies necessary to reach students of widely varying abilities, and many teachers are not.

UDL is an approach to learning in which curriculum designers have considered the scope of student abilities and learning styles, taking into account varying abilities to see, hear, speak, move, read, write, comprehend English, attend, organize, engage, and remember. They then create a "package" of classroom resources and situations that can be used as desired to meet the needs of these individuals. UDL encourages learning through a combination of flexible materials and methods that provide access, challenge, and engagement for each student.

Different explanations of UDL use different terms to describe its structure. For instance, the Center for Applied Special Technology (CAST), discusses UDL in terms of multiples: multiple representation of content, multiple means of expression, and multiple options for engagement. Behind this approach is the idea that individual brains receive and process information very differently, so instruction should be designed to accommodate those differences.

Alternatively, the Do-It Project at the University of Washington bases its functional description of UDL on the seven general principles of universal design developed by the Center for Universal Design at North Carolina State University:

1. ***Equitable use:*** The design is useful and marketable to people with diverse abilities.
2. ***Flexibility in use:*** The design accommodates a wide range of individual preferences and abilities.
3. ***Simple and intuitive:*** Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.
4. ***Perceptible information:*** The design communicates necessary information effectively to the user, regardless of existing conditions or the user's sensory abilities.
5. ***Tolerance for error:*** The design minimizes hazards and the adverse consequences of accidental or unintended actions.
6. ***Low physical effort:*** The design can be used efficiently and comfortably and with a minimum of fatigue.
7. ***Size and space for approach and use:*** Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.

This framework was initially created to describe the design of space and environment (including products), and it highlights ease of use and physical access. While any universally designed classroom technique must be equitable and accessible, students must be challenged in order to learn. This implies that a universally designed curriculum must also incorporate the appropriate degree of difficulty. Understanding the philosophy of physical and environmental access is important, but it is equally important to understand how "access" functions differently in educational situations. The next sections of this digest relate the characteristics of UDL to good classroom practices.

Flexibility Is The Key

- The curriculum must be flexible.
- The teaching methods must be flexible.
- The classroom environment must be flexible.
- Assessment and evaluation must be flexible.

At the heart of any explanation of universal design is the understanding that the product or service has been designed to be flexible in order to be usable by the widest range of individuals. This is, in fact, the "universal" in universal design. It is the opposite of a "one-size-fits-all" solution, in which the user conforms to the limitations of an inflexible product. Universal design considers how to provide a single curriculum, product, or environment that, as designed, can accommodate many different abilities. Students do not need to adapt themselves to the limits of the curriculum, because it can accommodate their particular needs. Instruction is universally designed when, without after-the-fact adaptation, it is equitable to all students, provides them easily perceptible information, requires low physical effort, and provides the appropriate level of challenge. The teacher must identify and break down the right barriers—those that impede the student's access (such as physical barriers) or their path to understanding (such as the information that is scaffolded for students)—but maintain an appropriate level and type of difficulty. If we eliminate all barriers—if there is no difficulty—students will not learn.

Include and Support Every Student

- The teacher must understand the student diversity in the class and teach in a way that includes all students.
- Instruction, materials, and environment must accommodate student differences, needs, limitations, and abilities.
- Teachers and students must maintain high expectations.
- Students are encouraged to be responsible for their own learning but are always given support to understand how to develop and maintain that responsibility.

Including students means more than just being flexible; it implies a classroom atmosphere where all students are welcome and supported—from the physical environment that provides easy access to all learning areas to the acknowledgment that each student is important and is included in all activities. This can be accomplished as simply as calling on as many different students as possible or creating heterogeneous groupings of students to work on activities.

When UDL is explained in terms of teaching strategies, the six principles of effective curriculum are often referenced. These are Big Ideas, Conspicuous Strategies, Mediated Scaffolding, Strategic Integration, Judicious Review, and Primed Background Knowledge (Kame'enui & Simmons, 1999). To give just two brief examples: A teacher is using Big Ideas when, rather than just teaching a lot of facts, her teaching encourages students to develop higher-order thinking strategies. And she is scaffolding student learning when, during a social studies class, she helps students with reading difficulties to grasp the overall concept by sounding out the phonemes with them. By using such strategies, teachers support the individual needs of their students and include them in the general curriculum. Whether a student is reading two grade levels below the rest of the class or three grades above other students, a supportive teacher understands their needs and uses all available resources to keep the student engaged, challenged, and progressing in the general education curriculum.

Be Prepared and Organized

- Know your class
- Set clear learning goals: What all students should learn, what most will learn, what some will learn.
- Organize and prepare materials to be used.
- Use the most effective teaching strategy.
- Use available resources:
  - Move beyond the textbook
  - Know how to integrate technology
  - Understand student groupings as a resource
  - Use collaboration and cooperative learning as resources.
- Convey expectations to students.
- Link assessment to teaching.

All the descriptions of UDL make certain assumptions about teachers: That they have been prepared professionally to make use of flexible curricular materials and technology, that they know how to assess the individual needs of their students, and that they know what instructional strategy will best meet those needs. As the saying goes, if all you have in your toolbox is a hammer, everything looks like a nail. To effectively deliver universally designed instruction, teachers need to have a well-stocked toolbox, so to speak. They must understand that learning theories such as multiple intelligences and brain-based learning can provide a means of understanding learning differences within and outside of the special education domain. They should be able to apply the lessons of progressive educational practices such as differentiated and anchored instruction, collaborative teaching, or constructivism to their particular situation. Even though these connections are far too complicated to be contained in a single chart attempting to explain UDL, they are implied in all attempts to show universal design for learning as an instructional practice.

Fortunately, groups like CAST and the University of Connecticut's Center on Postsecondary Education and Disability are developing information to demonstrate the connection between research and practice. The CAST website is creating case stories of UDL in action. One can also find at the website a number of explanations of progressive instructional techniques and their relationship to universal design.

The University of Connecticut project, funded by the U.S. Department of Education, is creating a clearinghouse of jury-reviewed instructional products that exemplify the principles of universal design for instruction. Another online resource, Project Intersect, is a study funded by the U.S. Office of Special Education Programs (OSEP) and conducted by the University of Oregon. It posts teacher-created lesson plans that promote inclusive and flexible teaching methods. While this project was not designed to specifically employ universal design, its innovative promotion of digital text as a flexible instructional tool is a fine example of universal design methods in practice.

Summary

Universal design for learning, like other student-centered programs of curriculum reform, begins with teachers considering how best to provide for the range of student abilities in their classrooms: What overall and specific learning goals are most appropriate for the students, what methods of instruction will help them achieve those goals, and how teachers will assess what the students have learned. The teacher's central concern is what the students can and will learn, rather than the general assumption that what is taught is necessarily what is being learned. In a universally designed classroom, the teacher's job is to provide individualized paths to learning for students by using the built-in flexibility of instructional and assistive technologies, progressive, proven teaching methods, and varied learning situations. Physical barriers to learning are removed for those students with sensory-motor disabilities and cognitive disabilities are accommodated by variable presentation of information.

But UDL is not just a matter of students having access: Students with learning or cognitive disabilities must be challenged in ways that effectively and affectively engage each of them. Nor is it solely in the province of special education: Its ultimate goal is to engage the full range of students, those with disabilities and those without, those who are average, below-average, and above-average. It is not a one-size-fits-all or do-it-yourself solution to learning problems, but a means to achieve an ideal educational experience. Like democracy, it is rarely achieved fully, but remains worth enacting even in part.

Resources

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